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TEST ADMINISTRATOR'S MANUAL FOR THE VOCATIONAL EDUCATION TEST BATTERY.

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THE STANDARDIZED INSTRUCTIONS IN THIS MANUAL ARE FOR ADMINISTERING THE TEST BATTERY USED WITH THE RESEARCH PROJECT "DEVELOPMENT OF A CURRICULUM AND MATERIALS FOR TEACHING BASIC VOCATIONAL TALENTS," (VT 004 454). THIS TEST BATTERY WAS ADAPTED FROM THE TEST BATTERY DEVELOPED BY THE STAFF OF PROJECT TALENT UNDER THREE SEPARATE CONTRACTS WITH THE COOPERATIVE RESEARCH BRANCH, THE OFFICE OF EDUCATION, AND THE DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE. THE NORMS ARE BASED UPON A NATIONAL SAMPLE OF APPROXIMATELY 440,000 SCHOOL STUDENTS AND WERE REPORTED IN "THE AMERICAN HIGH SCHOOL STUDENT," (ED 002 224) AND "STUDIES OF A COMPLETE AGE GROUP--AGE 15," (ED 003 858) WHICH GIVES NORMS FOR 15-YEAR-OLD BOYS AND GIRLS BOTH SEPARATELY AND COMBINED. THE NORMS FOR THE TESTS USED IN THIS BATTERY ARE GIVEN IN THE APPENDIX TO THIS MANUAL. RELATED DOCUMENTS ARE VT 004 454 THROUGH VT 004 471. (EM)

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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TEST ADMINISTRATOR'S MANUAL

FOR THE VOCATIONAL EDUCATION TEST BATTERY

The George Washington University
School of Education
Education Research Project
Washington, D.C.
1965

VT004456

I. INTRODUCTION

The instructions in this manual are for administering the test battery used in connection with the research project entitled "Development of a Curriculum and Materials for Teaching Basic Vocational Talents."

This test battery is adapted from the Project Talent Test Battery which was developed by the staff of Project Talent under three separate contracts with the Cooperative Research Branch, Office of Education, Department of Health, Education, and Welfare.[1] For details concerning the development of the test battery see "Designing the Study." [2]

The norms developed by Project Talent are based upon a national sample of approximately 440,000 school students and are reported in "The American High School Student," [3] and "Studies of a Complete Age Group—Age 15".[4] The norms reported in "Studies of a Complete Age Group—Age 15" are for 15-year-old boys and girls separately and combined. The norms from this latter publication for the tests used in this battery are given in the appendix to this manual.

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[1] *Cooperative Research Projects No. 226, 566, and 635.*

[2] *Flanagan, J. C., Dailey, J. T., Shaycoft, M. F., Orr, D. B., and Goldberg, I.* Studies of the American High School. *Technical Report to the U.S. Office of Education, Cooperative Research Project No. 226. Pittsburgh: Project TALENT Office, University of Pittsburgh, 1962.*

[3] *Flanagan, J. C., Davis, F. B., Dailey, J. T., Shaycoft, M. F., Orr, D. B., Goldberg, I., and Neyman, C. A., Jr.* The American High School Student. *Technical Report to the U.S. Office of Education, Cooperative Research Project No. 635. Pittsburgh: Project TALENT Office, University of Pittsburgh, 1964.*

[4] *Shaycoft, M. F., Dailey, J. T., Orr, D. B., Neyman, C. A., Jr., and Sherman, S. E.* Studies of a Complete Age Group—Age 15. *Technical Report to the U.S. Office of Education, Cooperative Research Project No. 566. Pittsburgh: Project TALENT Office, University of Pittsburgh, 1963.*

II. THE VOCATIONAL EDUCATION TEST BATTERY

The Vocational Education Test Battery consists of scales and tests taken intact from the Project Talent Test Battery plus several instruments constructed especially for this project. Table I shows the name of each test, the number of items it contains, the testing time, and the Project Talent identification number where appropriate.

TABLE 1

The tests of the Vocational Education Test Battery

Name of Test	*Number of Items*	*Time*	*Project Talent Ident. No.*
Abstract Reasoning	15	11	R-290
Mechanical Reasoning	20	11	R-270
Arithmetic Reasoning	16	12	R-311
Visualization in Two Dimensions	24	4	R-281
Visualization in Three Dimensions	16	9	R-282
Reading Comprehension	48	30	R-250
Information Test—	122	45	R-190*
Vocabulary Scale	21		R-102
Mathematics Scale	23		R-106
Physical Sciences Scale	18		R-107
Biological Sciences Scale	11		R-108
Aeronautics and Space Scale	20		R-111
Electricity and Electronics Scale	19		R-112
Interest Inventory	150	15	R-700*

* Modified form keeping scales intact.

In addition to the above tests which are bound in one booklet, having four separate answer sheets for each period of testing, there will be administered a Student Information Blank. This will consist of two parts: The first part contains questions concerning educational experiences and aspirations, background information, and socio-economic information. The second part contains questions concerning the student's interest in various vocational courses.

III. SCHEDULING OF TESTS

The tests should be given in the order in which they appear in the test booklet. The following grouping is suggested which will enable giving the whole battery in four class periods:

First Period
Abstract Reasoning
Mechanical Reasoning
Arithmetic Reasoning

Second Period
Visualization in Two Dimensions
Visualization in Three Dimensions
Reading Comprehension

Third Period
Information Test

Fourth Period
Interest Inventory
Student Information Blank

IV. MATERIALS NEEDED

The following materials should be available for each of the students in the class taking the test:

1 Test booklet
1 Answer sheet (Answer Sheet A for First Period, Answer Sheet B for Second Period, etc.)
1 Student Information Blank (for Fourth Period only)

No special pencils are required for marking the answer sheets. Soft pencils are preferred to hard, or to medium-hard ones. An extra supply of sharpened pencils should be available. Erasers may be used.

Erasers may be used to correct answers, but care must be taken in erasing to avoid destroying the surface of the paper as that can cause erroneous readings when the answer sheets are scored electronically.

The school must supply timing equipment. Accurate timing is important.

V. GENERAL INSTRUCTIONS FOR ADMINISTERING THE TESTS

The tests will be administered by the teacher of each class in his own classroom during certain periods of the regular school day, unless otherwise arranged.

The students should be instructed not to write in the test booklets, but to use scratch paper. If they find it necessary to change an answer, they may erase the incorrect one. Care should be taken to erase it completely, as questions with two marks will be scored as wrong.

Before each testing session, write the following on the blackboard:

DO NOT TURN OR OPEN YOUR TEST BOOKLETS UNTIL TOLD TO DO SO.

The following should also be on the blackboard:

NO. OF MINUTES FOR THIS TEST:
STARTING TIME:
STOPPING TIME:

Also, if there is not a large clock that all students can see, put the following on the blackboard:

NO. OF MINUTES REMAINING:

VI. FIRST PERIOD OF TESTING

A. *BEFORE THE SESSION BEGINS*

Check your materials. Be sure you have the following:

1 Test booklet for each student
1 Answer Sheet A for each student
a small supply of well-sharpened pencils with soft lead and good erasers
scratch paper for each student
suitable timing equipment

Distribute booklets and answer sheets before the students arrive, if this is feasible. Place the booklets with the cover up. It is permissible to have students assist in distributing these materials.

B. *AFTER THE STUDENTS HAVE ASSEMBLED*

When the students have assembled you should say to them, displaying each item,

> **You should have a test booklet and Answer Sheet A in front of you. Is there anyone who does not have these materials? Is there anyone who has more than one of any of these items?**

Make adjustments as necessary. Then say,

> **Now you should fill out the headings on your answer sheets. Write your last name first, then your first name, and then your middle name. In the space marked "Date" fill in today's date. Fill in your birth date using month, day, and year (e.g.: May 2, 1950). In the space marked "Age" put your age at your last birthday. Put my name in the space marked "Instructor".**

Look around to see how many students have completed. Then say,

> **Everyone should be finished by now.**

C. *ADMINISTERING THE ABSTRACT REASONING TEST*

When everyone is ready, say,

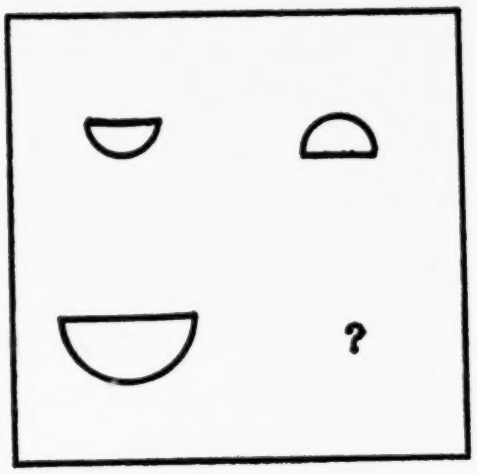
> **Open your test booklet to the ABSTRACT REASONING Test on page 2.**

Now read the directions for this test as follows:

> **Each item in this test consists of a set of figures arranged in a pattern, formed according to certain rules. Look at the pattern in sample item 1.**

The sample item is shown below; allow the students about 20 seconds to look at it.

S1.



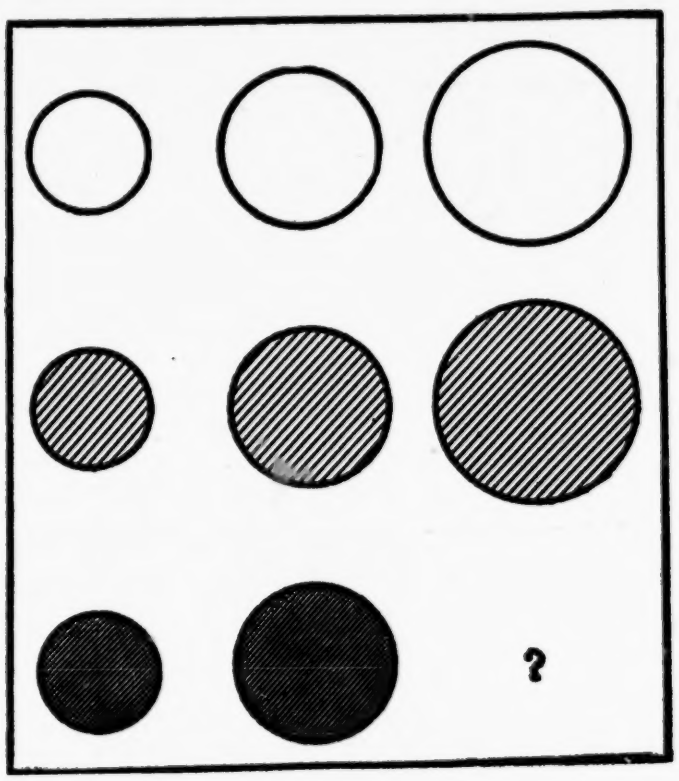
Then continue reading the directions, as follows:

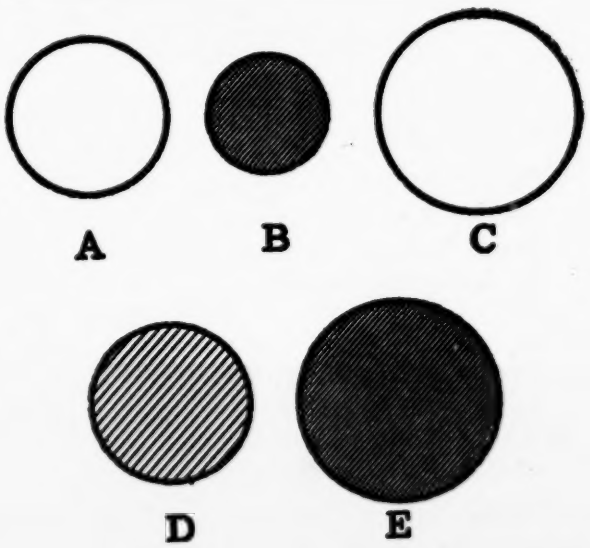
The question mark in the lower right corner of the box shows where a figure is missing in the pattern. You are to decide which of the five figures (A, B, C, D, or E) under the pattern belongs where the question mark is. In the case of the sample item above, the figure at the left in the bottom row is larger than the one above it but otherwise the same. In the top row the figure at the right is the same as the one to the left of it except that it has been turned upside down. Following these rules, the missing figure should be larger than the one above it, and exactly the same size as the one to the left of it, but upside down. Therefore E is the answer to this problem.

In each problem you are to decide what figure belongs where the question mark is in the pattern. To do this you have to figure out what the rule is according to which the drawings change, going from row to row, and what the rule is for the changes going from column to column. The items have different kinds of patterns and different rules by which the drawings change. Look at the next problem.

The sample item is shown below. Allow sufficient time for the students to look at it. This probably should not require more than about 10 seconds.

S2.





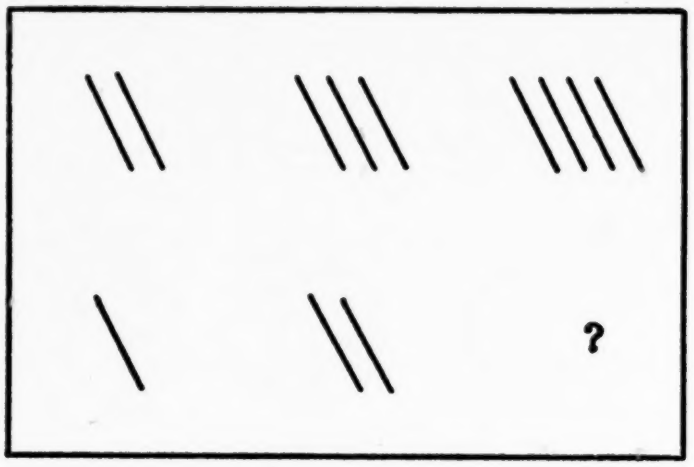
Then continue reading the directions, as follows:

Going from left to right, the circles get larger, and going from top to bottom they get darker. Therefore the answer has to be a circle which is the largest of the three sizes, and the darkest. Choices C and E are both the right size, but E is the only large circle with the correct shading. Thus E is the only drawing that fits in the pattern formed by the other circles. E is the answer, and therefore answer space E has been marked on the answer sheet for this item.

Now look at another problem, which is quite different from either of the above ones.

The sample item is shown below. Allow sufficient time for the students to look at it. This probably should not require more than about 20 seconds.

S3.



Then continue reading the directions, as follows:

What is the missing figure here? If you study the pattern you will see that going from left to right there is one more line in each figure than in the one to the left of it. Going from top to bottom, the number of lines in any figure is one less than in the figure just above it. Therefore the missing figure should have three lines. The answer is choice C (the three lines, slanting in the proper direction).

When you are given the signal, turn the page and start working the problems. For each problem decide what rules the pattern follows and find the answer that fits these rules and therefore "fits in" with the rest of the pattern. Many of the patterns are based on rules that are different from the ones in the sample item. Do not spend too much time on any one problem.

Then say,

You will have 11 minutes to do 15 problems. Mark your answers in the space labeled ABSTRACT REASONING at the top of Answer Sheet A. Do not mark in the booklet. Are there any questions?

(Do not spend more than 1 minute answering questions. Questions must be answered by repeating appropriate parts of the directions.)

Then say,

Turn the page and begin now.

Start your stopwatch or interval timer. Record on the blackboard the number of minutes (11) allowed for the test, starting time, and scheduled stopping time.

Allow exactly 11 minutes for the test,

Five minutes before time is up, say,

You have five minutes more.

One minute before time is up, say,

You have one minute more.

After exactly 11 minutes, stop your stopwatch, and say,

STOP! Put down your pencils.

D. *ADMINISTERING THE MECHANICAL REASONING TEST*

Say,

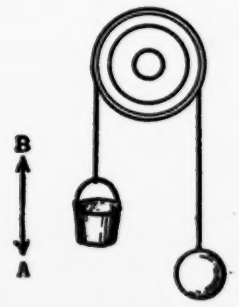
Look at the directions for MECHANICAL REASONING at the bottom of page 7. Read them to yourself while I read them aloud.

Now read the directions, as follows:

This is a test of your ability to understand mechanical ideas. You will have some diagrams or pictures with questions about them.

Now look at the sample question.

The sample item is shown below, but do not read it aloud.



S1. Which way will the bucket move when the ball goes up?

A. In direction A (down)
B. In the direction B (up)
C. There is no way of telling

Allow about one minute, then say,

The answer is A because if the ball moves up, the bucket will move down. Since choice A is "Down" answer space A has been marked on the answer sheet for this sample item.

For each problem, read the question, study the picture above it, and mark the letter of the answer on your answer sheet.

Then say,

You will have 11 minutes to do 20 problems. Mark your answers in the space marked MECHANICAL REASONING on your Answer Sheet A right below where you were working on the last test. Do not mark in the booklet. Turn the page and begin now.

Start your stopwatch or interval timer. Record on the blackboard the number of minutes (11) allowed for the test, starting time, and scheduled stopping time.

Allow exactly 11 minutes for the test.
Five minutes before time is up, say,

You have five minutes more.

One minute before time is up, say,

You have one minute more.

After exactly 11 minutes stop your stopwatch, and say,

STOP! Put your pencil down.

E. *ADMINISTERING THE ARITHMETIC REASONING TEST*

Say,

The next test consists of 16 arithmetic reasoning items. Use scratch paper for all scratch work. Don't mark in the booklet. Mark your answers in the next section of your answer sheet under where you were working before. You will have 12 minutes for this test. All right, go ahead.

Start your stopwatch or interval timer.

If there is no clock in the room, every five minutes write on the blackboard the number of minutes remaining.

Check to be sure that each student is working in the proper place on his answer sheet.

Five minutes before time is up, say,

You have five minutes more.

One minute before time is up, say,

You have one minute more.

When time is up, say,

STOP! Put down your pencils. Close your booklets. Hand in your answer sheets and booklets.

This is the end of the First Period of Testing.

VII. SECOND PERIOD OF TESTING

A. *BEFORE THE SESSION BEGINS*

Check your materials. Be sure you have the following:

1 Test booklet for each student

1 Answer Sheet B for each student

a small supply of well-sharpened pencils with soft lead and good erasers

suitable timing equipment·

Distribute booklets and answer sheets before the students arrive, if this is feasible. Place the booklets with the cover up. It is permissible to have students assist in distributing these materials.

B. *AFTER THE STUDENTS HAVE ASSEMBLED*

When the students have assembled you should say to them, displaying each item:

You should have a test booklet and Answer Sheet B in front of you. Is there anyone who does not have these materials? Is there anyone who has more than one of any of them?

Make adjustments as necessary. Then say,

Now you should fill in the blanks in the heading of your answer sheet. Write your last name first, then your first name, and then your middle name. In the space marked "Date" fill in today's date. Fill in your date of birth using month, day, and year (e.g.: May 2, 1950). In the space marked "Age" put your age at your last birthday. Put my name in the space marked "Instructor".

Look around to see how many students have completed. Then say,

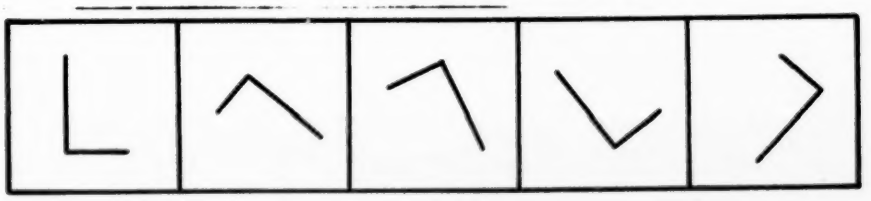
Everyone should be finished by now.

C. *ADMINISTERING THE VISUALIZATION IN TWO DIMENSIONS TEST*

Say,

Turn to the directions for the VISUALIZATION IN TWO DIMENSIONS Test on page 15. Read the directions to yourself while I read them aloud.

Look at the drawings below:



Then continue reading the directions, as follows:

The first drawing is shaped like the letter L. The rest of the drawings are like the first, except that they have been turned in different directions.

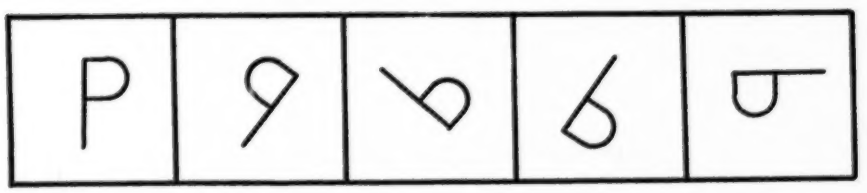
If you think of the drawing at the left above as being made out of wire and lying on a table, the positions shown in each of the other four drawings could be taken simply by turning the wire figure at the left around, without lifting it off the table.

You may demonstrate by putting your palm flat on the desk and rotating it at the same time, saying,

Like this.

Then say,

Now look at the next row of drawings.



Now continue reading the directions, as follows:

The first drawing is shaped like the letter P. But even if the rest of the drawings were turned around, they would still be backwards; you would have to lift the figure at the left off the table and flip it over to make any of the other figures.

You may demonstrate with your hand, by laying it on the desk or table, with the fingers spread out, palm down, and then flipping it over so that the palm is up.

Then continue reading the directions as follows:

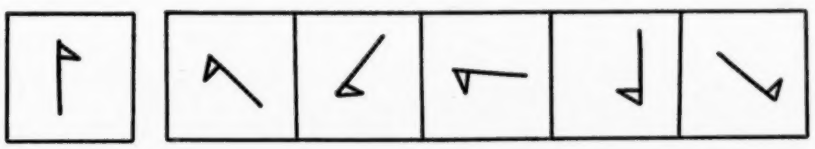
In this test each problem has one drawing at the left and five similar drawings to the right of it, but only one of the five drawings on the right exactly matches the drawing at the left if you turn it around. The rest of the drawings are backwards even when they are turned around.

Now look at the sample problem below.

Which one of the choices, when turned around, exactly matches the diagram at the left?

The sample item is shown below:

S1.



Allow sufficient time for the students to look at the sample item. This probably will not require more than about 20 seconds.

Then continue reading the directions, as follows:

You should have picked choice D. All of the other choices have been "lifted off the table and flipped over" as well as turned around, and thus are backwards. For the sample problem, answer space D has been marked on your answer sheet.

For each problem in this test, choose the one drawing which, when turned around or rotated, is exactly like the basic drawing at the left.

Then say,

You will have 4 minutes for 24 problems. Mark your answers on your answer sheet in the space labeled VISUALIZATION IN TWO DIMENSIONS. Do not mark in your booklet. Are there any questions?

Answer questions by repeating appropriate parts of the directions. Do not spend more than 1 minute or so.

Then say,

Turn the page and begin.

Start your stopwatch or interval timer. Record on the blackboard the number of minutes (4) allowed for this test, starting time, and scheduled stopping time.

Allow exactly 4 minutes for the test.

One minute before time is up, say,

You have one minute more.

After exactly 4 minutes, stop your stopwatch, and say,

STOP! Put down your pencils.

D. *ADMINISTERING THE VISUALIZATION IN THREE DIMENSIONS TEST*

Say,

Turn to the directions for VISUALIZATION IN THREE DIMENSIONS, on page 19 of your test booklet. Read these directions to yourself while I read them aloud.

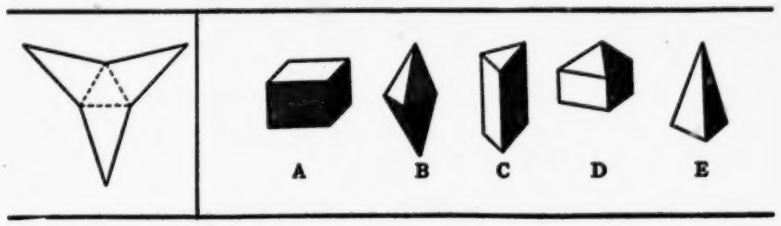
Now read the directions, as follows:

Each problem in this test has a drawing of a flat piece of metal at the left. At the right are shown five objects, only one of which might be made by folding the flat piece of metal along the dotted lines. You are to pick out the one of these five objects which shows just how the piece of flat metal will look when it is folded at the dotted lines. When it is folded, no piece of metal overlaps any other piece, or is enclosed inside the object.

Now look at the sample item.

The sample item is shown below. Allow sufficient time for the students to look at it. This probably should not require more than about 15 seconds.

S1.



Then continue reading the directions, as follows:

Of the five objects shown, only E could be made from the flat piece shown at the left by folding it at each of the dotted lines. E shows how the flat piece would look after being folded. Answer space E has been marked for sample item S1 on your answer sheet.

Remember, all folds are indicated by dotted lines; the solid lines show the cuts in the piece, and parts are not folded inside of other parts of any objects (in other words, there is no overlapping).

Then say,

You will have 9 minutes for 16 problems. Do not mark in the booklet. Mark your answers on the answer sheet in the space

labeled VISUALIZATION IN THREE DIMENSIONS, just below where you have been working. Are there any questions?

Answer questions by repeating appropriate parts of the directions. Do not allow more than one minute for questions.

Then say,

Turn the page and begin.

Start your stopwatch or interval timer.

Record on the blackboard number of minutes (9) allowed for the test, starting time, and scheduled stopping time.

Allow exactly 9 minutes for the test.

Five minutes before time is up, say,

You have five minutes more.

One minute before time is up, say,

You have one minute more.

After exactly 9 minutes stop your stopwatch, and say,

STOP! Put your pencils down.

E. *ADMINISTERING THE READING COMPREHENSION TEST*

Say,

Open your booklet to page 23 and read the directions for the READING COMPREHENSION Test. Go ahead.

Allow exactly one minute to read the directions. Then say,

You will have 30 minutes for 48 questions on eight different passages. Mark your answers on the answer sheet in the space marked READING COMPREHENSION below where you were working previously. Turn the page and begin.

Start your stopwatch or interval timer.

Record on the blackboard the number of minutes (30) allowed for the test, starting time, and scheduled stopping time.

Allow exactly 30 minutes.

Check to see that all students are marking their answers in the correct part of their answer sheet.

If there is no clock in the room, every five minutes write on the blackboard the number of minutes remaining.

Five minutes before the time is up, say,

You have five minutes more.

One minute before time is up, say,

You have one minute more.

When the 30 minutes is up, stop your stopwatch, and say,

STOP! Put down your pencils. Close your booklets. Hand in your answer sheets and booklets.

This is the end of the Second Period of Testing.

VIII. THIRD PERIOD OF TESTING

A. *BEFORE THE SESSION BEGINS*

Check your materials. Be sure you have the following:

1 Test booklet for each student
1 Answer Sheet C for each student
a small supply of well-sharpened pencils with soft lead and good erasers
suitable timing equipment

Distribute booklets and answer sheets before the students arrive, if this is feasible. Place the booklets with the cover up. It is permissible to have students assist in distributing these materials.

B. *AFTER THE STUDENTS HAVE ASSEMBLED*

When the students have assembled you should say to them, displaying each item,

You should have a test booklet and Answer Sheet C in front of you. Is there anyone who does not have these materials? Is there anyone who has more than one of any of them?

Make adjustments as necessary. Then say,

Fill in the blanks at the top of your answer sheet as you did with the previous ones. Are there any questions?

Answer any questions, referring to the instructions for previous testing sessions, if necessary.

Look around to see how many students have completed. Then say,

Everyone should be finished by now.

C. *ADMINISTERING THE INFORMATION TEST*

Say,

The next test is the INFORMATION TEST. It is on page 32 of your test booklet. Please open your booklets to that page now and read the directions with me.

Read the directions as follows:

In this test you will be asked a large number of questions about many different things. Some of them will be very easy for you and some will be very hard. Do not become discouraged if there are many you cannot answer. No one will know about all of the things asked. But be sure to read every question. Even though there are many very hard questions, there are also some very easy ones that you will certainly be able to answer correctly, and these are mixed in among the hard ones. READ EVERY QUESTION!

Do the best you can to answer every item. If you have no idea of the right answer to an item, leave it blank. But if you think you know the answer, even

though you are not sure, mark your choice. These "hunches" are often right.

Do not mark more than one answer for any question. There is only one right answer for each question. Pick the one that you think is best. Work rapidly. If you cannot answer a question at once, go on to the next one and go back later to the ones you skipped, if you have time.

When you have finished reading the directions, say,

You will have 45 minutes to answer 122 questions. Begin now.

Start your stopwatch or interval timer.

Record on the blackboard the number of minutes (45) allowed for the test, starting time, and scheduled stopping time.

Answer questions individually in order not to disturb the rest of the students. Walk around the room to check that all the students are marking their answers in the correct part of the answer sheet and that they understand how to mark them. Show them how, if they need help along these lines, but do *not* answer questions about the items.

If there is no clock in the room, every five minutes write on the blackboard the number of minutes remaining.

Five minutes before time is up, say,

You have five minutes more.

One minute before time is up, say,

You have one minute more.

Stop the test promptly at 45 minutes. Say,

STOP! Put down your pencils and close your booklets. Hand in your booklets and answer sheets.

This is the end of the Third Period of Testing.

IX. FOURTH PERIOD OF TESTING

A. *BEFORE THE SESSION BEGINS*

Check your materials. Be sure that you have the following:

1 Test booklet for each student
1 Answer Sheet D for each student
1 Student Information Blank for each student
a supply of well-sharpened pencils with soft lead and good erasers
suitable timing equipment

Distribute the two booklets and answer sheets before the students arrive, if this is feasible. Place the booklets with the cover up. It is permissible to have students assist in distributing these materials.

B. *AFTER THE STUDENTS HAVE ASSEMBLED*

When the students have assembled you should say to them, displaying each item,

You should have three things on your desk in front of you. You should have a test booklet, a Student Information Blank booklet, and an Answer Sheet D. Is there anyone who does not have these three things? Is there anyone who has more than one of any of them?

Make adjustments as necessary. Then say,

Fill in the blanks at the top of your answer sheet as you did with previous ones. Are there any questions?

Answer any questions, referring to the instructions for previous testing sessions, if necessary.

Look around to see how many students have completed. Then say,

Everyone should be finished by now.

C. *ADMINISTERING THE INTEREST INVENTORY*

Say,

The next test will be the INTEREST INVENTORY. It consists of 150 questions about your interests. Read the directions carefully. Start with item 1 and work straight through. After you finish one part go on to the next. Turn to page 38 of your test booklet and begin. Do not take too much time on any one item. You will have 15 minutes to finish.

Start your stopwatch or interval timer. Allow exactly 15 minutes for the test. Five minutes before time is up, say,

You have five minutes more. Be sure you have started on the second part of the Inventory.

One minute before time is up, say,

You have one minute more.

After exactly 15 minutes, stop your stopwatch, and say,

STOP! Put down your pencils. Close your booklets.

D. *ADMINISTERING THE STUDENT INFORMATION BLANK*

Say,

> **Put your booklet entitled STUDENT INFORMATION BLANK in front of you. There is no answer sheet for this booklet. All your answers are to be put in the booklet itself. This is not a test. None of the answers you give will affect your grades in this class. Answer each one to the best of your ability. You will have 30 minutes to fill out the questions. Begin now.**

Start your stopwatch or interval timer.

If there is no clock in the room, every five minutes write on the blackboard the number of minutes remaining. It is suggested that the test booklets and the answer sheets used for the Interest Inventory be collected while the students are filling out the STUDENT INFORMATION BLANK.

When 30 minutes are up, say,

> **STOP! Put down your pencils. Close your booklets and pass in your booklets and answer sheets.**

This is the end of the Fourth Period of Testing.

APPENDIX A

PERCENTILE CONVERSION TABLES FOR TWELVE VARIABLES FROM PROJECT TALENT TEST BATTERY

Table No.	*Name of Test*	*Project Talent Identification No.*	*Page*
A-1	Abstract Reasoning Test	R-290	13
A-2	Mechanical Reasoning Test	R-270	14
A-3	Arithmetic Reasoning Test	R-311	15
A-4	Visualization in Two Dimensions	R-281	16
A-5	Visualization in Three Dimensions	R-282	17
A-6	Reading Comprehension	R-250	18
A-7	Information Test, Vocabulary Scale	R-102	19
A-8	Information Test, Mathematics Scale	R-106	20
A-9	Information Test, Physical Sciences Scale	R-107	21
A-10	Information Test, Biological Sciences Scale	R-108	22
A-11	Information Test, Aeronautics and Space Scale	R-111	23
A-12	Information Test, Electricity and Electronics Scale	R-112	24

EXPLANATORY NOTES FOR PERCENTILE CONVERSION TABLES

1. Unlike most tables, these percentile conversion tables are to be read from right to left. They are designed primarily to tell the percentile corresponding most closely to each raw score, rather than the raw score corresponding most closely to each percentile. Therefore to find the percentile corresponding to a given raw score, the raw score is located in the appropriate column of the table and the corresponding percentile is then read from the column to the left of the bank of raw scores.
2. The nearest percentile is given for every raw score. The stated percentile value represents the midpoint of the interval. Thus for instance, any percentile value computed to lie between 63.50 and 64.50 would be called a percentile of "64." The percentile value "50" represents the range from 49.50 to 50.50.
3. In accordance with the procedure stated above in paragraph 2, a percentile of "100" means anything above 99.50.
4. Similarly a percentile of "0" means anything below 0.50.

TABLE A-1

Percentile Corresponding to Each Raw Score for
Project Talent Abstract Reasoning Test (R-290)

%ile	Raw Score		
	Boys	Girls	B & G Combined
100	15	15	15
99		14	14
98	14		
97			
96			
95	13	13	13
94			
93			
92			
91			
90			
89		12	
88	12		12
87			
86			
85			
84			
83			
82			
81			
80			
79		11	
78			11
77	11		
76			
75			
74			
73			
72			
71			
70			
69			
68			
67		10	
66			10
65	10		
64			
63			
62			
61			
60			
59			
58			
57			
56			
55			
54		9	
53			9
52	9		
51			

%ile	Raw Score		
	Boys	Girls	B & G Combined
50			
49			
48			
47			
46			
45			
44			
43			
42		8	8
41	8		
40			
39			
38			
37			
36			
35			
34			
33			
32		7	7
31	7		
30			
29			
28			
27			
26			
25			
24		6	
23	6		6
22			
21			
20			
19			
18			
17		5	5
16	5		
15			
14			
13			
12			
11	4	4	4
10			
9			
8			
7	3	3	3
6			
5			
4	2	2	2
3			
2	1	1	1
1	0	0	0
0			

See explanatory notes on page 12.

TABLE A-2

Percentile Corresponding to Each Raw Score for
Project Talent Mechanical Reasoning Test (R-270)

%ile	Raw Score		
	Boys	Girls	B & G Combined
100		18-20	20
99	20	17	19
98	19	16	
97			18
96		15	
95			
94	18	14	17
93			
92			
91			16
90		13	
89	17		
88			
87			
86			15
85		12	
84			
83	16		
82			
81			14
80			
79		11	
78			
77			
76	15		
75			13
74			
73			
72			
71		10	
70			
69			12
68	14		
67			
66			
65			
64			
63			
62		9	
61			11
60			
59	13		
58			
57			
56			
55			
54			10
53			
52		8	
51	12		

%ile	Raw Score		
	Boys	Girls	B & G Combined
50			
49			
48			
47			
46			
45			9
44			
43	11		
42			
41		7	
40			
39			
38			
37			8
36			
35	10		
34			
33			
32			
31			
30		6	
29			
28	9		7
27			
26			
25			
24			
23			
22			
21	8		
20			6
19		5	
18			
17			
16			
15	7		
14			
13			5
12			
11		4	
10	6		
9			
8			4
7	5		
6		3	
5			
4	4		3
3			
2	3	2	2
1	1-2	1	1
0	0	0	0

See explanatory notes on page 12.

TABLE A-3

Percentile Corresponding to Each Raw Score for Project Talent Arithmetic Reasoning Test (R-311)

%ile	Raw Score		
	Boys	Girls	B & G Combined
100	16	16	16
99		15	15
98	15		
97		14	
96			14
95	14		
94			
93		13	
92			13
91	13		
90			
89		12	
88			
87			12
86	12		
85			
84			
83			
82		11	
81			11
80			
79	11		
78			
77			
76			
75		10	
74			10
73			
72	10		
71			
70			
69			
68			
67		9	
66			
65			9
64			
63	9		
62			
61			
60			
59			
58		8	
57			
56			8
55			
54	8		
53			
52			
51			

%ile	Raw Score		
	Boys	Girls	B & G Combined
50			
49		7	
48			
47			7
46			
45			
44	7		
43			
42			
41			
40			
39		6	
38			
37			6
36			
35			
34	6		
33			
32			
31			
30			
29			
28		5	
27			
26			5
25	5		
24			
23			
22			
21			
20			
19			
18		4	
17			4
16	4		
15			
14			
13			
12			
11			
10		3	
9	3		3
8			
7			
6			
5			
4	2	2	2
3			
2	1	1	1
1			
0	0	0	0

See explanatory notes on page 12.

TABLE A-4

Percentile Corresponding to Each Raw Score for
Project Talent Visualization in 2 Dimensions Test
(R-281)

%ile	Raw Score		
	Boys	Girls	B & G Combined
100		24	
99	24	23	24
98	23	22	23
97			22
96		21	
95	22		
94		20	21
93			
92	21		
91		19	20
90			
89			
88	20		
87		18	19
86			
85			
84			
83	19	17	18
82			
81			
80			
79		16	
78	18		17
77			
76			
75			
74			
73		15	
72	17		16
71			
70			
69			
68			
67		14	
66			15
65	16		
64			
63			
62			
61			
60		13	14
59	15		
58			
57			
56			
55			
54			
53		12	13
52	14		
51			

%ile	Raw Score		
	Boys	Girls	B & G Combined
50			
49			
48			
47		11	
46			12
45	13		
44			
43			
42			
41			
40		10	11
39	12		
38			
37			
36			
35		9	10
34			
33	11		
32			
31			
30		8	9
29	10		
28			
27			
26			
25		7	8
24	9		
23			
22			7
21	8	6	
20			
19			
18	7		6
17		5	
16			
15	6		
14			5
13		4	
12	5		
11			4
10			
9	4	3	
8			3
7			
6	3		
5		2	2
4	2		
3		1	
2	1		1
1	0	0	0
0			

See explanatory notes on page 12.

TABLE A-5

Percentile Corresponding to Each Raw Score for
Project Talent Visualization in 3 Dimensions Test
(R-282)

%ile	Raw Score		
	Boys	Girls	B & G Combined
100	16	16	16
99		15	15
98	15	14	
97			14
96		13	
95	14		
94			
93			13
92			
91		12	
90	13		
89			
88			
87			12
86			
85		11	
84			
83	12		
82			
81			
80			11
79			
78			
77		10	
76			
75	11		
74			
73			
72			
71			10
70			
69			
68		9	
67			
66			
65	10		
64			
63			
62			9
61			
60			
59			
58			
57			
56		8	
55	9		
54			
53			
52			
51			8

%ile	Raw Score		
	Boys	Girls	B & G Combined
50			
49			
48			
47			
46	8		
45			
44		7	
43			
42			
41			
40			7
39			
38			
37			
36			
35	7		
34			
33			
32		6	
31			
30			
29			6
28			
27			
26	6		
25			
24			
23			
22			
21			
20		5	
19			5
18			
17	5		
16			
15			
14			
13			
12		4	
11			4
10	4		
9			
8			
7			
6			
5	3	3	3
4			
3			
2	2	2	2
1	1	1	1
0	0	0	0

See explanatory notes on page 12.

TABLE A-6

Percentile Corresponding to Each Raw Score for
Project Talent Reading Comprehension Test (R-250)

%ile	Raw Score		
	Boys	Girls	B & G Combined
100	48	48	48
99	47	47	47
98	46	46	46
97	45	45	45
96			
95	44	44	44
94			
93	43		43
92		43	
91	42		
90		42	42
89			
88	41		41
87		41	
86	40		
85			40
84		40	
83	39		39
82		39	
81	38		
80			38
79		38	
78	37		
77			37
76	36	37	
75			
74			36
73	35	36	
72			35
71			
70	34	35	
69			34
68			
67	33	34	
66			33
65	32		
64		33	
63			32
62	31		
61		32	
60			31
59	30		
58		31	
57			30
56	29		
55		30	
54			29
53	28		
52		29	
51	27		28

%ile	Raw Score		
	Boys	Girls	B & G Combined
50			
49		28	
48	26		27
47			
46		27	
45	25		26
44			
43	24	26	
42			25
41			
40	23		
39		25	24
38	22		
37			23
36		24	
35	21		
34			22
33	20	23	
32			
31		22	21
30	19		
29			20
28	18	21	
27			
26			19
25	17	20	
24			18
23	16	19	
22			17
21	15		
20		18	
19			16
18	14	17	
17			15
16	13	16	
15			14
14	12		
13		15	13
12	11	14	
11			12
10		13	
9	10		11
8		12	
7	9	11	10
6			
5	8	10	9
4	7	9	8
3	6	8	7
2	5	6-7	6
1	1-4	1-5	1-5
0	0		

See explanatory notes on page 12.

TABLE A-7

Percentile Corresponding to Each Raw Score for
Project Talent Vocabulary Scale Test (R-102)

%ile	Raw Score		
	Boys	Girls	B & G Combined
100	21	21	21
99	20	20	20
98		19	19
97	19		
96		18	
95			18
94	18		
93		17	
92			
91			17
90			
89	17	16	
88			
87			
86			16
85			
84			
83	16	15	
82			
81			
80			15
79			
78			
77		14	
76	15		
75			
74			
73			
72			14
71			
70		13	
69			
68	14		
67			
66			
65			13
64			
63			
62		12	
61			
60			
59	13		
58			
57			12
56			
55			
54		11	
53			
52			
51	12		

%ile	Raw Score		
	Boys	Girls	B & G Combined
50			
49			
48			11
47			
46		10	
45			
44			
43			
42	11		
41			
40			10
39			
38			
37		9	
36			
35			
34	10		
33			
32			9
31			
30			
29		8	
28			
27	9		
26			
25			8
24			
23			
22			
21	8	7	
20			
19			
18			7
17			
16			
15	7	6	
14			
13			6
12			
11	6		
10			
9		5	
8	5		5
7			
6			
5	4	4	4
4			
3	3	3	3
2			
1	2	2	2
0	0-1	0-1	0-1

See explanatory notes on page 12.

TABLE A-8

Percentile Corresponding to Each Raw Score for
Project Talent Mathematics Scale (R-106)

%ile	Raw Score		
	Boys	Girls	B & G Combined
100	22-23	20-23	22-23
99	20-21	18-19	20-21
98	19	17	18-19
97	18	16	17
96			
95	17	15	16
94			
93	16	14	15
92			
91	15		
90		13	14
89			
88			
87	14	12	13
86			
85			
84	13		
83		11	12
82			
81			
80	12		
79			11
78		10	
77			
76			
75	11		
74			10
73			
72		9	
71			
70			
69	10		
68			9
67			
66			
65		8	
64			
63	9		
62			
61			8
60			
59			
58		7	
57			
56	8		
55			
54			
53			7
52			
51			

%ile	Raw Score		
	Boys	Girls	B & G Combined
50			
49	7	6	
48			
47			
46			
45			6
44			
43			
42			
41			
40	6		
39		5	
38			
37			
36			
35			5
34			
33			
32			
31	5		
30			
29			
28			
27		4	
26			
25			
24			4
23			
22			
21	4		
20			
19			
18			
17		3	
16			
15			3
14			
13	3		
12			
11			
10			
9			
8		2	
7			2
6	2		
5			
4			
3		1	1
2	1		
1	0	0	0
0			

See explanatory notes on page 12.

TABLE A-9

Percentile Corresponding to Each Raw Score for Project Talent Physical Sciences Scale (R-107)

%ile	Raw Score		
	Boys	Girls	B & G Combined
100	18	16-18	18
99	17	15	17
98			16
97	16	14	
96			15
95			
94		13	
93	15		14
92			
91			
90		12	
89	14		13
88			
87			
86		11	
85			
84			12
83	13		
82			
81			
80		10	
79			
78			11
77	12		
76			
75			
74			
73		9	
72			
71			10
70			
69	11		
68			
67			
66			
65		8	
64			
63			9
62			
61	10		
60			
59			
58			
57			
56			
55		7	8
54			
53			
52	9		
51			

%ile	Raw Score		
	Boys	Girls	B & G Combined
50			
49			
48			
47			
46			7
45		6	
44	8		
43			
42			
41			
40			
39			
38			
37			6
36	7		
35			
34		5	
33			
32			
31			
30			
29			
28			
27	6		5
26			
25			
24		4	
23			
22			
21			
20	5		
19			
18			4
17			
16			
15			
14		3	
13	4		
12			
11			3
10			
9			
8	3		
7		2	
6			
5			2
4	2		
3			
2		1	1
1	1		
0	0	0	0

See explanatory notes on page 12.

TABLE A-10

Percentile Corresponding to Each Raw Score for
Project Talent Biological Sciences Scale (R-108)

%ile	Raw Score		
	Boys	Girls	B & G Combined
100		11	
99	11		11
98		10	
97			10
96			
95	10		
94		9	
93			
92			
91			9
90			
89			
88	9		
87			
86		8	
85			
84			
83			
82			8
81			
80			
79			
78			
77			
76	8	7	
75			
74			
73			
72			
71			
70			7
69			
68			
67			
66			
65			
64			
63	7	6	
62			
61			
60			
59			
58			
57			6
56			
55			
54			
53			
52			
51			

%ile	Raw Score		
	Boys	Girls	B & G Combined
50	6		
49			
48		5	
47			
46			
45			
44			
43			5
42			
41			
40			
39			
38			
37	5		
36			
35			
34		4	
33			
32			
31			
30			
29			4
28			
27			
26			
25	4		
24			
23			
22			
21			
20		3	
19			
18			
17			3
16			
15	3		
14			
13			
12			
11			
10			
9		2	
8			2
7			
6			
5			
4			
3		1	1
2	1		
1			
0	0	0	0

See explanatory notes on page 12.

TABLE A-11

Percentile Corresponding to Each Raw Score for
Project Talent Aeronautics and Space Scale (R-111)

%ile	Raw Score		
	Boys	Girls	B & G Combined
100	20	14-20	20
99	19	12-13	18-19
98	18	11	17
97			16
96	17	10	15
95			14
94	16		
93			13
92	15	9	
91			
90			12
89	14		
88			
87			11
86	13	8	
85			
84			
83			10
82			
81	12		
80			
79			
78			
77		7	9
76	11		
75			
74			
73			
72			
71			
70			8
69	10		
68			
67			
66			
65		6	
64			
63			
62			
61	9		
60			7
59			
58			
57			
56			
55			
54			
53			
52	8		
51			

%ile	Raw Score		
	Boys	Girls	B & G Combined
50		5	6
49			
48			
47			
46			
45			
44			
43			
42	7		
41			
40			
39			
38			
37			5
36			
35			
34		4	
33	6		
32			
31			
30			
29			
28			
27			
26			
25			4
24			
23	5		
22			
21			
20			
19		3	
18			
17			
16			
15	4		
14			3
13			
12			
11			
10			
9			
8	3	2	
7			2
6			
5			
4	2		
3		1	
2			1
1	1	0	0
0	0		

See explanatory notes on page 13.

TABLE A-12

Percentile Corresponding to Each Raw Score for
Project Talent Electricity and Electronics Scale
(R-112)

%ile	Raw Score		
	Boys	Girls	B & G Combined
100	19	15-19	19
99	18	14	18
98			17
97	17	13	
96			16
95		12	
94			
93			15
92	16		
91			
90		11	
89			14
88			
87			
86	15		
85			
84			
83		10	13
82			
81			
80			
79			
78	14		
77			12
76			
75			
74		9	
73			
72			
71			
70			
69			11
68	13		
67			
66			
65			
64			
63		8	
62			
61			10
60			
59			
58	12		
57			
56			
55			
54			
53			
52			9
51			

%ile	Raw Score		
	Boys	Girls	B & G Combined
50		7	
49			
48			
47	11		
46			
45			
44			
43			8
42			
41			
40			
39			
38			
37	10	6	
36			
35			
34			
33			7
32			
31			
30			
29			
28	9		
27			
26			
25		5	
24			6
23			
22			
21	8		
20			
19			
18			
17			
16	7		5
15		4	
14			
13			
12			
11	6		
10			4
9			
8	5	3	
7			
6			
5	4		3
4			
3	3	2	
2			2
1	1-2	1	1
0	0	0	0

See explanatory notes on page 13.